CSM Taq Polymerase

For research use only

Cat. No./Spec.				
Cat. No	*P1231*	*P1232*	*P1233*	*P1234*
Spec.	*250U*	*1,000U*	*5,000U*	*50,000U*

Description

CSM Taq Polymerase of GDSBio is a Cold Sensitive Mutant enzyme with low activity at room temperature and reactivation above 60°C. Provides excellent specificity, sensitivity, and yield. Amplify fragments up to 5 kb in length (simple template). The elongation rate is 2 min/kb (70-75°C, up to 20 s/kb for simple templates). It has 5' -3' polymerase activity, but no 3' -5' exonuclease activity. The products of CSM Taq Polymerase have overhanged dA at 3' -end.

Components

Component	P1231	P1232	P1233	P1234
CSM Taq Polymerase	*50 μl*	*200 μl*	*1 ml*	*1 ml × 10*
10× Hotstart Buffer（Mg^{2+} Plus）	*1.25 ml*	*1.25 ml × 2*	*1.25 ml × 10*	*50 ml × 10*

Unit Definition

One unit is defined as the amount of the enzyme required to catalyze the incorporation of 10 nmole of dNTPs into an acid-insoluble form in 30 minutes at 70° C using hering sperm DNA as substrate.

Storage

Store at -20°C for 2 years.

Protocol

1. Preparation of reaction solution

Add the following reagents to the proper thermal cycler reaction tube or plate on ice:

Ordinal	Component	50-μl rxn	Final conc.
1	*10× Hotstart Buffer（Mg^{2+} Plus）*	*5 μl*	*1×*
2	*dNTPs（2.5mM）*	*4 μl*	*0.2 mM*
3	*upstream primer (10 μM)[1]*	*2 μl*	*0.4 μM*
4	*downstream primer (10 μM)[1]*	*2 μl*	*0.4 μM*
5	*CSM Taq Polymerase（5U/μl）[2]*	*0.5-1 μl*	*2.5-5U*
6	*template DNA[3]*	*1-4 μl*	*<1 μg*
7	*Nuclease-free Water[4]*	*To 50 μl*	*-*
optional	*$MgCl_2$($MgSO_4$)/PCR Enhancer[5]*	*Variable*	*-*

[1] Recommended range of final primer concentration: 0.1-1μM. The concentration can be reduced when the specificity is poor, and the concentration can be increased when the efficiency is low.

[2] The amount of CSM Taq Polymerase can be adjusted according to the needs of the experiment.

[3] The optimal dosage varies with different templates. The recommended dosage for some DNA templates is as follows (50 μl reaction system).

Template	Human genomic DNA	λDNA	cDNA	Plasmid DNA
Dosage	1ng-500g	0.5ng-5ng	1-5μl	0.1ng-10ng

[4] Nuclease-free Water (Cat. #：P9021/P9022/P9023) can be ordered from GDSBio.

[5] 25mM $MgCl_2$ (Cat. #：P9031)and PCR Enhancer (Cat. #：P9041) can be ordered from GDSBio.

2. Perform PCR using the following thermal cycling condition

Stage	Temperature	Time	Number of Cycles
Initial Denaturation	*94°C*	*2 min*	*1*
Denaturation	*94°C*	*30 sec*	*25-35*
Annealing	*55°C[1]*	*30 sec*	
Extension	*72°C*	*Variable*	
Final Extension	*72°C*	*5-10 min*	*1*

[1] The annealing temperature should be set according to primers with lower Tm values.

[2] The optimal extension time is 2min/kb (up to 20s/kb for simple templates).

Quality Control

The absence of endodeoxyribonucleases, exodeoxyribonucl- eases and ribonucleases is confirmed by appropriate quality tests. Functionally tested in amplification of a single-copy gene from human genomic DNA.

Product Use Limitations

This product is sold exclusively for research purposes and in vitro use. Neither the product, nor any individual components, was tested for use in diagnostic applications or for drug development, nor is it suitable for administration to humans or animals. Please refer to the MSDS, available upon request.